

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
1 July 2004 (01.07.2004)

PCT

(10) International Publication Number
WO 2004/054710 A1

(51) International Patent Classification⁷: **B01J 23/50**,
23/66, 37/00

(21) International Application Number:
PCT/JP2002/013183

(22) International Filing Date:
17 December 2002 (17.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicants (for all designated States except US): **JAPAN SCIENCE AND TECHNOLOGY AGENCY** [JP/JP]; 1-8, Hon-cho 4-chome, Kawaguchi-shi, Saitama 332-0012 (JP). **NATIONAL INSTITUTE FOR MATERIALS SCIENCE** [JP/JP]; 2-1, Sengen 1-chome, Tsukuba-shi, Ibaraki 305-0047 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WALSH, Dominic** [GB/GB]; Flat 4 Cumberland House Norfolk Crescent,

Bath BA1 2BG (GB). **ARCELLI, Laura** [IT/IT]; Via Luigi Rizzo, 47, I-06100 Perugia (IT). **MANN, Stephen** [GB/GB]; c/o University of Bristol, School of Chemistry, Bristol BS8 1TS (GB). **IKOMA, Toshiyuki** [JP/JP]; B201, 1-14-5, Sengen, Tsukuba-shi, Ibaraki 305-0047 (JP). **TANKA, Junzo** [JP/JP]; 3-6, Kashimadai, Tsukuba-shi, Ibaraki 305-0032 (JP).

(74) Agent: **NISHIZAWA, Toshio**; Three F Minami Aoyama Bldg. 7F, 11-1, Minami-Aoyama 6-chome, Minato-ku, Tokyo 107-0062 (JP).

(81) Designated States (national): JP, US.

(84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METAL OR METAL OXIDE POROUS MATERIAL PREPARED BY USE OF DEXTRAN OR RELATED SOLUBLE CARBOHYDRATE POLYMER

(57) Abstract: The present invention provides a new metal or metal oxide porous material and a preparation method thereof, and more particularly concerns a new sponge-shaped noble metal, especially a silver porous material that is useful as a catalyst for an organic synthetic reaction such as an epoxidation reaction and partial oxidation reaction, and a functional material for electronic devices, heat dissipation and bacterial filtration and a preparation method thereof, as well as such a new silver catalyst.

ATTACHMENT E

WO 2004/054710 A1